

REMARKS

This amendment responds to the office action mailed March 31, 2009. In the office action the Examiner:

- rejected claims 30-51 under 35 U.S.C. 101 as being directed to non-statutory subject matter;
- rejected claims 1-22, 25, 29-51 under 35 U.S.C. 102(b) as being anticipated by Gennaro et al. (US 5,742,768) in view of Finseth et al. (US 6,271,840); and
- rejected claims 1-22, 25, 29-51 under 35 U.S.C. 103(a) as being unpatentable over Gennaro et al. (US 5,742,768) in view of Finseth et al. (US 6,271,840)

After entry of this amendment, the pending claims are: claims 1-22 and 29-54.

Interview Summary

On June 11, 2009, the Applicant's representatives Douglas Crisman and Elizabeth Morris and Examiner Steven Theriault conducted an interview. Claim 1 and the Gennaro reference were discussed. No agreement was reached.

Remarks Regarding Amendments to the Specification

Pursuant to 37 C.F.R. § 1.125 a mark-up substitute specification is included in Appendix A and a clean substitute specification is included in Appendix B. The specification has been amended to remove references to drawings that have been canceled, to correct grammatical errors, to correct typographical errors, to include paragraph numbers, and to include element reference numbers. This Substitute Specification contains no new matter.

Remarks Concerning Revised Figures

Pursuant to 37 C.F.R. § 1.121(d) revised figures are included in Appendix C. Numerous "prior art" figures have been canceled as noted. In Figures 6A-8B various element numbers have been included to comport with the amended specification. It should be noted that Figure 7G was inadvertently removed from the June 2, 2000 preliminary amendment. However, Figure 7G was in the original May 23, 2000 filing and has now been added again with the element number inclusions discussed above.

No substantive aspects of the Figures have been changed.

The Examiner is respectfully requested to approve the proposed drawing changes.

Remarks Regarding Amendments to the Claims

Independent claim 1 has been amended to state that the categorization structure is for substantially all of a website. Support for this change is found in at least pages 16 and 17 of the Application as Filed.

Independent claims 31, 42, 45, 50, and 51 have been amended to each recite a system including one or more processors and memory that enables digitally stored information to be viewed on a user interface. Support for this change is found on at least page 26 of the Application as Filed.

Dependent claim 25 has been cancelled.

Dependent claims 32-41, 43-44, and 46-49 have been amended to comport with the language changes of the independent claims from which they depend.

Claims 31, 38, 40, and 51 have been amended to state that the displays are responsive to movement by the cursor, rather than necessarily only “roll-over,” as previously claimed. Support for these changes is found on at least pages 18, 19, and 20 of the Application as Filed.

Similarly, claims 32, 42, and 44 have also been amended to replace “roll-over” with “movement” over the claimed tracking string. Support for these changes is found in at least pages 22, 24, and 25 of the Application as Filed.

The Applicant has added new claims 52-54, which claim subject matter previously described and shown but not previously claimed. Support for these claims is found in Figures 6A-7G and corresponding specification discussion.

No new matter has been added.

With respect to all amendments, the Applicant has not dedicated or abandoned any unclaimed subject matter. Moreover, the Applicant has not acquiesced to any characterizations of the invention, nor any rejections or objections of the claims, made by the Examiner.

Rejections under 35 U.S.C. § 101

The Examiner rejected claims 30-51 under 35 U.S.C. § 101 as being directed to non-statutory subject matter. In this Amendment, the independent claims have been amended to

include one or more processors and memory. Support for this change is found on at least page 26 of the Application as Filed. Therefore, the Applicant submits that the Examiner's rejection has been addressed.

Claim Rejections - 35 U.S.C. § 102 and § 103

The Examiner rejected claims 1-22, 25, 29-51 under 35 U.S.C. § 102 as being unpatentable over Gennaro et al. (US 5,742,768), and rejected these same claims alternatively under 35 U.S.C. § 103 as being unpatentable over Gennaro in view of Finseth et al. (US 6,271,840). The currently pending independent claims in this application are 1, 31, 42, 45, 50, 51, and 52.

In considering the scope of the prior art and the differences between the prior art and the present claims, the Examiner relies on Gennaro and Finseth as disclosing every limitation of the independent claims on which the other rejected claims depend.

Claims 1-22, 29-30, and 52-54

Gennaro and Finseth do not teach every element of claim 1 which states:

A system for navigating and browsing electronic media, comprising:

a device enabling viewing of digitally stored information, the device being configured to display at least portions of ***a categorization structure for substantially all of a website*** having a plurality of nested cascading category levels, each category level of the plurality of nested cascading category levels comprising a plurality of category titles of electronic media content stored on at least one storage device, each category title having a selectable link-token to the stored content for said each category title, said each category title also being coupled to a nested subcategory structure of said each category title, the nested subcategory structure of said each category title comprising link-tokens of category titles wherein said each category title and the category titles in the different plurality of category levels are able to be browsed independently of having to select and retrieve the stored content for any title from the at least one storage device, ***wherein the categorization structure enables a user viewing content of any category title in the categorization structure to retrieve content of any other category title in the categorization structure using a single retrieval command.***

(Emphasis added.)

Gennaro does not teach “*a displayed categorization structure that is viewable in conjunction with the content of any web page* in the categorization structure.”

Gennaro does not teach, a “*a categorization structure for substantially all of a website*” wherein “*the categorization structure enables a user viewing content of any category title in the categorization structure to retrieve content of any other category title in the categorization structure using a single retrieval command.*”

Gennaro teaches that information content that is linked “from an initial displayed web page.” (Gennaro, Col. 4, line 63.) Under Gennaro, each embedded menu is created by an applet and uniquely corresponds to its particular hotspot. As such, the only page that allows browsing of the overall structure is the initial web page, with several hotspots each corresponding to a distinct applet for displaying the corresponding menu for that hotspot. (Gennaro, Col. 4 line 66 – Col. 5, line 2 and Figure 2A and 2B.) As such, Gennaro does not teach displaying a categorization structure that is viewable and browsable from any page in the in the website, i.e., Gennaro does not teach that “*a user viewing content of any category title in the categorization structure*” can see and browse the categorization structure.

Furthermore, Gennaro does not teach “*a user viewing content of any category title in the categorization structure to retrieve content of any other category title.*” Gennaro teaches that one can only see the embedded menu that corresponds to a particular hotspot available in the initial web page. As such, the user would not be able to go sideways or upwards in the menu while as they can under claim 52. Gennaro teaches that once the user is viewing the content of any page on the menu, the hotspot corresponding to the menu is no longer available. Thus, in Gennaro, the user would have to return back to the initial page with the hotspots in order to navigate to another web page in the same menu. Stated another way, Gennaro teaches only “downward linking” from an initial page containing several hotspots with separate menus rather than a more robust browsing option of retrieving “*content of any other category title* in the categorization structure.” Gennaro simply does not teach being able to browse to any page in a categorization structure while viewing the content of another page in that categorization structure. This is an efficient browsing mechanism taught in the current application, and specifically covered in claim 1 is not disclosed, taught, or suggested in Gennaro.

Finseth was not cited for and indeed does teach either of these concepts.

In light of the above, it is respectfully submitted that Gennaro and Finseth do not disclose, teach, or suggest all of the limitations of claim 1. For at least this reason, claim 1 and its dependent claims are patentable over Gennaro and Finseth. Claim 29 is patentable over Gennaro and Finseth for at least similar reasons. Claim 52 and its dependent claims are also patentable for at least similar reasons as it states “categorization structure that is viewable in conjunction with the content of any web page” and ... [enabling] a user to “retrieve content of any other web page in the categorization structure.” Therefore, the Applicant respectfully requests that the Examiner withdraw the rejection under U.S.C. § 102 and 103 and allow of claims 1-22, 29-30, and 52-54.

Claim 31-41, 45-49, and 51

Gennaro and Finseth do not teach every element of claim 31 which states:

A system with one or more processors and memory that enables digitally stored information to be viewed on a user interface, comprising:

a cursor controllable by a user;

a primary category navigation region including a plurality of primary links to electronic media content, the primary category navigation region being responsive to movement of the cursor;

a secondary category navigation region including a plurality of secondary links to electronic media content, the secondary category navigation region being responsive to movement of the cursor and being displayed only upon movement by the cursor over one of the primary links;

a tertiary category navigation region including a plurality of tertiary links to electronic media content, the tertiary category navigation region being responsive to movement of the cursor and being ***displayed only upon movement by the cursor over one of the secondary links***; and

a content display region configured to display the electronic media content associated with one of the primary, secondary, or tertiary links only upon selection of such link by a user of the user interface.

(Emphasis added.)

Gennaro and Finseth do not teach “***a tertiary category navigation region*** including a plurality of tertiary links to electronic media content, the tertiary category navigation region

being responsive to movement of the cursor and being ***displayed only upon movement by the cursor over one of the secondary links.***” Gennaro indicates that the embedded menu appears in its entirety when the user selects the hot spot. Gennaro states “through one action web page 58 the user can access all three links.” (Gennaro Col 5, line 36.) In other words, that the whole menu pops up when the hot spot is selected. In contrast, claim 31 only displays the tertiary category navigation region “upon movement by the cursor over one of the secondary links.”

Finseth was not cited for and indeed does not teach this claim element. In light of the above, it is respectfully submitted that Gennaro and Finseth do not disclose, teach, or suggest all of the limitations of claim 31. For at least this reason, claim 31 and its dependent claims are patentable over Gennaro and Finseth. Claims 45 and 51 and their dependent claims are also patentable for at least similar reasons. Therefore, the Applicant respectfully requests that the Examiner withdraw the rejection of claims 31-41, 45-49, and 51 under U.S.C. § 102 and 103.

Additionally it should be noted that Gennaro and Finseth do not teach “each respective category navigation region is displayed, regardless of the location of the cursor, until a ***browsing de-selection command*** is performed on the respective navigation region” of claim 47. This concept could be thought of as a “sticky menu” because the selected menu (or sub-menu) will “stick” (i.e., remain displayed) until a user performs a command to de-select them as claimed in claim 47. The Examiner has cited no place in either Gennaro or Finseth as teaching a browsing de-selection command. Therefore, claim 47 and 48 are patentable over Gennaro and Finseth for at least this additional reason.

Claim 42-44 and 50

Gennaro and Finseth do not teach every element of claim 42 which states:

A system with one or more processors and memory that enables digitally stored information to be viewed on a user interface, comprising:

- a cursor controllable by a user;
- a content display region configured to display the electronic media content;
- a ***tracking string display region*** that represents a path to the particular electronic media content being displayed in the content display region, ***the tracking string display region being responsive to movement of the cursor and comprising a plurality of separate link portions***;
- a tracking string category navigation region that, ***only upon movement by the cursor*** over one of the link portions, displays a plurality of tracking string category links to electronic media content at the same path level as the link portion.

(Emphasis added.)

An example of the claimed tracking string is shown as element (702) in Figure 7A “Art & Antiques | Arts.” The tracking string (702) allows a user to see the items at the same level as “Arts” under the “Arts” portion of the tracking string as shown in Figure 7B, and allows a user to see the items at the same level as “Arts & Antiques” under the “Arts & Antiques” portion of the tracking string as shown in Figure 7C of the Application, depending on which portion is moved over by the user.

Neither Gennaro nor Finseth teach “a tracking string display region that represents a path to the particular electronic media content being displayed in the content display region, the tracking string display region being responsive to movement of the cursor and comprising a plurality of separate link portions.” The Examiner cites Gennaro for this tracking string element and states:

Gennaro shows a tracking string that represents the path of the selection, where the location field provides a dual function of displaying the URL of the current location of the mouse along with the status bar. (See Column 4, lines 1-15).

(03/31/09 Office Action, p. 15, emphasis added.)

Gennaro's location field, which is element 36, is merely an area displaying the URL of the current location. A user may enter a new URL in the location field 36 to display a new page corresponding to the URL location entered. (Gennaro, Col. 4 lines 3-6.) However, this location field 36 does not have a “plurality of separate link portions.” It is not a link at all, but instead just shows the URL of the page already being displayed or the URL of the page about to be displayed. In other words, clicking on the location field will not initiate a page download. Furthermore, Gennaro’s location field does not have a plurality of separate link portions.

Similarly, Gennaro’s status bar, which is element 38, does not have a plurality of separate “link portions” and is not “responsive to movement of the cursor.” Gennaro states that this status bar 38 “provides information about the operation of web browser 24.” (Gennaro, Col. 4, lines 11.) Figure 2 of Gennaro seems to indicate that it is a download progress bar. There is no indication in Gennaro that the status bar 38 would be capable of being responsive to cursor movement over it or to facilitate linking of any sort.

Furthermore, Gennaro’s location field 36 and status bar 38 do not display a plurality of category links when a mouse “rolls over” any portion of them. The status bar does not react to any mouse movement. The location field will only react in the sense that it will allow a user to input a new URL when the location field is selected. In either case, no links will be displayed when a mouse rolls over them. As such Gennaro also fails to teach the additional claim element “a tracking string category navigation region that, only upon movement by the cursor over one of the link portions, displays a plurality of tracking string category links to electronic media content at the same path level as the link portion.”

For the above reasons, neither the location field nor the status bar of Gennaro is the claimed tracking string. Finseth was not cited for and indeed does not teach a tracking string either. In light of the above, it is respectfully submitted that Gennaro and Finseth do not disclose, teach, or suggest all of the limitations of claim 42. For at least this reason, claim 42 and its dependent claims are patentable over Gennaro and Finseth. Claim 50 is also patentable for similar reasons. Therefore, the Applicant respectfully requests that the Examiner withdraw the rejection of claims 42-44 and 50 under U.S.C. § 102 and 103.

By responding in the foregoing remarks only to particular positions asserted by the examiner, the applicant does not necessarily acquiesce in other positions that have not been explicitly addressed. In addition, the applicant's arguments for the patentability of a claim should not be understood as implying that no other reasons for the patentability of that claim exist.

In light of the above amendments and remarks, the Applicant respectfully requests that the Examiner reconsider this application with a view towards allowance. The Examiner is invited to call the undersigned attorney at (650) 843-4000, if a telephone call could help resolve any remaining items.

Respectfully submitted,

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Appendix A

Appendix B

Appendix C

**A METHOD AND SYSTEM FOR ONE-CLICK NAVIGATION AND BROWSING
OF ELECTRONIC MEDIA AND THEIR CATEGORY STRUCTURE AS WELL
AS TRACKING THE NAVIGATION AND BROWSING THEREOF**

PRIORITY NOTICE

[0001] This Non-Provisional application claims the benefit of the May 24, 1999 filing date of Provisional U.S. Patent Application Serial Number 60/136,149.

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BACKGROUND OF THE INVENTION

Field of the Invention

[0003] The present invention relates to methods and apparatus for navigating electronic media. The present invention allows the browser to browse through the nested categorization structure before committing to invoke a link to call for particular content pages listed under a particular category. In the prior art, only one level of categories can be view in one category listing webpage. The next level categories under any particular category at that level is accessed, by invoking the link-token of the category by clicking on the category title, and download the next page where the next level category titles are listed. This results in loading many intermediary pages, going back and forth to search for the interested category and the related content.

[0004] The present invention also relates to a dynamic tracking-string/tracking-device that embeds the category browsing apparatus. Thus allowing browsers to dynamically examine and pursue other browsing paths, and to arrive at new destination content with a single mouse

click and a single page-download. The present invention enables the browser to return to, or arrive at any page at any previous, or forward branching point at any categorical level, from any page at any level of the categorization structure.

Description of Related Art

[0005] The application of hyper text mark up language (HTML), scripting languages, such as Java, Common Gateway Interface (CGI), Practical Extraction and Report Language (PERL), Visual Basic Script Language, VB (Visual Basic) Script, and derivatives thereof, other languages, markup languages, or meta-languages, such as the Standard Generalized Markup Language (SGML -ISO 8879), eXtensible Markup Language (XML), Cascading Style Sheet (CSS), and Java Speech Markup Language (JSML), allows the static and dynamic linking of computer stored objects (texts, graphics, icons, parts, items, lists, audio and video segments, etc.) from a container of objects to related information and/or other objects and containers via software link-tokens. A link-token is an addressing pointer, pointing to the memory location of the link destination). A link-token is usually represented by an underline, bolded text-string or a symbol, a bullet, an icon, a graphical thumbnail, a graphical text-string or a symbol etc., and can only be invoked one at a time from each electronic media “page,” An electronic media “page” has a single and unique URL (Universal Resource Locator) address. It can physically be less, equal to, or more than one or many conventional 8¹/₂” by 11” printed paper page.

[0006] When a link-token associated with a particular object is selected and invoked, for example, by clicking a computer “mouse” button while the pointer is resting at the object, the destination object that is linked by this particular link-token is brought forth from the database or memory bank in the connected storage media addressed by the link-token, and presented for viewing or examination by browsers, i.e., humans, devices, or computer software.

[0007] However, on each predefined page of such electronic media where many objects and link-tokens are present, only one link-token can be invoked (clicked) at a time from one web-page to bring forth the particular web-page addressed by the particular link-token invoked. If additional objects from the starting page are of interest, one must return to that page, with as

many click-and-wait's on the "back" button, as the browser has already clicked forward on the current path. Once back there, only one single selection of links can be made and "clicked" to bring forth the next level content page linked. Moving forward and backward between pages of media linked by the link-tokens in this manner is a slow and labor-intensive procedure.

[0008] The viewing and examination of such electronic media is organized by categories. Only the top-level categories and at some instances, some of the associated second level categories are listed on the first actionable starting page, the home-page. From any page that lists multiple category titles for selection, only one category title can be selected, and only one action can be made: to bring forth the one page that particular category title points to, usually the next level categories listed under that particular category title.

[0009] The information the browser actually desires to view is often several levels away. The browser thus make one click on one category at a time, loading one page listing the next level of category titles, and repeating the process until the desired category is finally reached to be clicked and linked to the content page. The trade-off_{that} can be made is between the number of categories listed at the same level, versus how many levels of categorization.

[0010] ~~The prior art~~ Some websites list[[s]] the first level of categories on the home-page, and the next level categories under each first level category on their respective subsequent linked page. The third level categories under each 2nd-level categories are listed in the respective subsequent third level page, and so forth. A browser must follow a certain category path by common sense over several click-and-wait path. If the path yields no desirable result for information sought, or if the browser wishes to examine another category branch several links and levels back, the browser must return to that branching level, repeat the process until the interested information is located and reached.

[0011] To track the browsing path and facilitate returning to the previous pages along the browsing path, ~~the prior art~~ some websites list[[s]] in a string the URL link titles along the browsing path, and requires the browser to click and download a web page along the path to view a sub-category listing under that particular category along the current browsing path. To examine the sub-categories under another category at that same level, the browser must find,

select and click that category, and download a web-page that lists its sub-categories, and so forth. Examining many categories at the same level and branching to other paths with the prior art would require clicking forward and backward numerous times, and each time waiting for a page to download.

[0012] The state-of-the art of category-assisted browsing and the tracking scheme from the most advanced sites are described ~~illustrated~~ in Figure 1 through Figure 5. While these various category assisted browsing schemes are superior than most other smaller or lesser sites in that they all attempt to reduce the number of total levels the viewers/ browsers much click-through and download to reach the intended content, ~~[[t]]~~They all trade off between having a larger number of categories at each level to reduce the number of levels a browser must click through Each of these schemes also in someway presents a select partial listing of the next level categories under each current level category. As shown in Figures 1B1 through 1B2 ~~1B6~~, ebaY.Com combines the 2nd and the 3rd levels immediately after a primary category on the home-page is clicked. As shown in Figure 2A, Yahoo lists the primary (1st) level categories arrayed across the home-page, and a small number of selected 2nd level categories listed under each primary level category. As shown on the left side of Figure 3A, Homeportfolio, a state-of-the-art site showcasing high-end home furnishing products uses a combination of minimizing the number of levels (by increasing the number of categories in each level), as well as giving an option for “category search,” where the entire unstructured category titles can be linearly alphabetically scrolled through a small viewing box. As shown in Figure 4A, AOL.com lists 1st and 2nd level categories on the home-page, with a small number of first level categories, and a large number of 2nd level categories in a column-format. As shown in Figure 5A ~~5B~~, Spiegel, a department storeweb-site, lists the primary “shopping” categories on the left most column of its shopping page. As shown in Figure 5B ~~5C~~, ~~[[t]]~~The 2nd level category titles of a particular primary category title would appear under the category when it is selected and clicked. The remaining primary level category titles is pushed lower on the column. The detailed mechanisms of these schemes are described in the following sections.

[0013] ebaY.Com’s category browsing is illustrated in Figures 1A through 1D. The home-page is shown in Figure 1A, with primary (first level) categories listed on the left side of

the page. As an example, we selected the “Collectibles” category, by using the mouse to move the cursor to rest at that text-string. The only thing one can do after that is to click the left mouse button to commit to the selection, which brings forth Figure 1B1 through 1B6, a 6 physical-page length listing of the next two levels of categories under “Collectibles.” The list is alphabetically arranged, first column on the left downward from “A” on Figure 1B1 to “H” on Figure 1B5 (Figure 1B6 contains a few ebaY.Com functional buttons). The second column begins with “H” on Figure 1B1 to “M-Miscellaneous” (which contains 4,000 items within that category) on Figure 1B5. The list is very large and requires considerable effort to view or to comprehend. However, the number of levels is minimized, so that it does not become too annoying to the browser to have to click and download too many times to reach the desired category. The gain is obtained at the cost of cramming an incomprehensibly large number of category titles at each level, and an even larger number of content items under each category title. As an example, we click on the 3rd level “Golden Age” category under the second level “Comic Books” category on Figure 1B[[4]]2. The download result is shown on Figure 1C, which contains the next level (4th) categories: “General,” “Superhero,” “Crime,” “Horror/Sci-Fi,” and “Funny Animals;” a list of 8 “featured items,” and a long list of 2620 Golden Age Comic Books, which takes more than 52 web-pages (as indicated on Figure 1C) to display we printed only the first physical page of the first web page that contains 3 physical pages as noted on the lower left corner of Figure 1C.

[0014] ebaY.com’s “tracking-string/tracking-device” is shown at around one quarter down from the top of this first physical page of the first web-page from the more than 52 consecutive web-pages listing the items under the “Golden Age” sub-category of the “Comic Books” category. The tracking-string/tracking-device is as the following: “Top : Collectibles : Comic Books : Golden Age,” with “Current Auction” under the string. The “Top” contains a link to return to the home-page Fig. 1A. The “Collectibles” contains the link to return to the “Collectibles” page, Figures 1B1 through 1B6. The “Comic Books” contains the link to return to the Comic Books page. The “Golden Age” is the current page, thus unlinked.

[0015] We ~~than~~ then click the “General” category on this page (listings under the Golden Age category), and parsed the 2626 item list down to a 1360 item list that still will take more

than 28 web-pages to display as shown on Figure 1D[[1]]. ~~We print only the first 2 physical pages shown in Figure 1D1 and 1D2 of the first “web page” that contains 3 physical pages.~~

[0016] Yahoo.com’s category browsing scheme is illustrated in Figure[[s]] 2A through 2E. The primary (first) level categories and a few selected 2nd level and occasionally 3rd level categories under each primary category are shown on the homepage in Figure 2A. For example, under “Business & Economy” category, three sub-categories: Companies (2nd level), Finance (2nd level), and jobs (3rd level) are listed. By clicking on “Business & Economy” category, one brings the link-destination page ~~shown in Figure 2B~~, with 36 second-level category titles listed under “Business & Economy.” Clicking on the “Employment & Work” (2nd level) sub-category, the destination page ~~shown in Figure 2C~~ is brought forth, listing 28 third level categories. Clicking on the “jobs,” 3rd level category ~~on Figure 2C~~ brings the link-destination page ~~Figures 2D1 through 2D6~~, listing the 6 sub-categories (4th level) ~~as shown in Figure 2D1~~, and Internet job sites ~~in 2D1 through 2D6~~. Clicking on the “Company job Listings” brings a ~~Figure 2E1 through 2E7~~, listing of 358 links to company job sites in alphabetical order. The “tracking-string/tracking-device” is presented only on the very top of the 1st physical page (~~Figure 2E1~~) of this very long web-page. The tracking-string/tracking-device reads:” Home > Business and Economy > Employment and Work > Jobs.” The 2nd line of the tracking-string/ tracking-device indicates the current page category title: “Company Job Listings.” A browser can click on the “Employment and Work” link on the tracking-string/ tracking-device to return to that category page, and select another sub-category, for example, the “Career Fields,” by placing the mouse on “Career Fields,” and click the mouse button. ~~A page Figure 2F~~ would be brought forth from the remote site-server to show an alphabetically ordered list of career fields. Clicking on “Financial Service” ~~in Figure 2F~~ downloads a ~~Figure 2G~~, listing of the next 5 sub-categories. Clicking on “Individual Resumes” ~~in Figure 2G~~ downloads a three-physical-page web-page showing 79 names of individuals who post their resumes under the “Financial Services” category, and the links to the resumes. ~~Figure 2H shows the first physical page of this web page.~~

[0017] Similarly, in Shopping.Yahoo.Com is ~~shown in Figure 2I~~, where a “Kitchen Appliances” category is reached after 4 clicks and 4 page-downloads, showing the 29 fifth level

categories. There are yet at least two more clicks and two more page-downloads to reach specific information of a desired item.

[0018] The Homeportfolio.com's category browsing is illustrated in Figures 3A through 3[[H]]B. The shortened "quick start" category list is given on the mid-left section of the home-page as shown in Figure 3A. An unstructured category list is accessible via the small "category search" box located at the end of the content on the left side of the home-page. When the downward triangle on the right side of the small box is clicked, a somewhat longer box with a scroll bar appears, with an alphabetical listing of category titles. Scrolling the scroll bar causes the long category list of 158 titles as shown on Figure 3B to slide by the "box" for viewing. When the correct category is found, a click on the category would bring the web-page containing the items listed under that particular category onto the display screen from the remote site-server. The Homeportfolio method enables the browser to pick an exact category from the start, so that a page containing the items under that category can be reached without many steps of downloading category-listing pages. However, to examine the unstructured list of 158 category titles by scrolling the list through a small window, can not be said to be less annoying than having to download several hierarchical category-listing pages, one-level at-a-time. To illustrate the hierarchical category browsing, we click the mouse button when the cursor is rested on the "Furniture and Home Furnishing" category as shown in Figure 3A. A "product explorer" web-page as shown in Figure 3C is downloaded from the Homeportfolio remote site-server, containing two types of category titles. Moving the cursor to the "Living & Family Room" category shown in Figure 3C and clicking on the mouse-button downloads a page listing the eight 2nd level category titles as shown in Figure 3D. Clicking on the "Furniture" category title on this page causes Figure 3E to be downloaded, a listing of the 14 sub-categories under "Furniture."[[.]] Clicking on the "Coffee Table" category on this page brings Figure 3F, a list of the number of Coffee Tables present on the site from each manufacturer. Figure 3G1 and 3G2 shows the first two pages of the There are 4 pages of the 96 item Coffee Table thumbnail list. The enlarged graphics and detail descriptions are viewed one at a time. Graphical thumbnails like those in Figure 3G are small images frequently used in on-line or other computer viewable recording media (such as CDRom) to represent objects that are best represented by images. The

thumbnail and the underlined text-title represent the same link that links the thumbnail and the text title to the larger graphics and the more detailed descriptions of the item, ~~as shown in Figure 3H.~~

[0019] America On Line, AOL.Com's category assisted navigation is shown in Figure[[s]] 4A ~~through 4K.~~ The AOL home-page shown in Figure 4A has four primary categories: Web Centers, Shortcuts, Shopping, and Community. The next level categories are accessible and organized under these primary categories in four columns. Each of the primary categories also has a link token that links to a page listing the 2nd-level sub-categories shown in the home page, along with some other advertising and promotional information ~~shown in Figure 4B1.~~ Clicking on any of the categories listed in the "SHOP BY CATEGORY" section, download a page listing logos and banners with links to the on-line stores linked to AOL under that category and a repeat of the "SHOP BY CATEGORY" section ~~shown in Figure 4B2.~~

[0020] To illustrate AOL's process, we move the cursor to "Apparel," and click on the left button of the mouse. The action brings a page ~~as shown in Figure 4C,~~ containing banners of various AOL linked on-line stores selling apparel products. Each banner has a link-token linking to the store's independent web-site off the AOL.Com site. Using the mouse to slide the cursor to the "Harold's" banner, and clicking on the left button of the mouse, causes ~~Figure 4D~~ a page to be downloaded to the browser screen from the "Harolds.Com" site-server. Harold's categorization scheme takes over from that point. To find clothes to buy, one needs to click on the "shop now" link, ~~the second active graphical text-string from the left.~~ Figure 4E A new page is downloaded to the browser's computer from the site-server, and the Harold's shopping categories are shown. If the shopper is looking for men's clothes, move the cursor to "MEN'S" category, and click the mouse button. ~~Figure 4F~~ A new page is downloaded from Harold's site-server. If "Sportcoats" is of interest, bring the cursor there, and click the mouse button, ~~Figure 4G shows up with then~~ thumbnails of three selections are shown. To see any one of the three selections, one must move the cursor and click the mouse button again, on one, and only one of the three selections. If the cursor is moved to the black sports coat show on the top, and the mouse button clicked, a web page ~~as shown in Figure 4H~~ is downloaded to the screen from the site-server. If the shopper wants to see another one of the three selections, the cursor must be

moved to the “Back” icon on the browser frame, and the mouse button clicked to bring back the page with the three selections ~~shown in Figure 4G~~ and the process repeated.

[0021] If the shopper decides that none of the three sports coats catches his fancy, and wishes to see some other stores, the best thing for him to do is to enter www.aol.com into the “Go to” box on the browser frame at the top of the screen, to return to the AOL home-page (~~Figure 4H and 4I~~). It would require too many clicking on the “Back” icon, and much waiting between each click for the downloading of the intermediary pages, to return to the “Apparel” page (~~Figure 4C~~). To explore the AOL process further, let us move the cursor to “Auctions” or “Department Stores” under “Shopping.” A web-page ~~shown in Figure 4J or 4K~~ is downloaded from the AOL site-server, with banners of various on-line auction or department store sites, and the “SHOP BY CATEGORY” section on the lower half of the page listing the primary shopping categories. Each banner represents a shopping site linked to, but off the AOL site. When a banner is clicked, the browser exits AOL site and begins downloading the home-page of the particular site the clicked-banner is linked. The category structure is that of the banner site, independent of AOL, ~~such as shown earlier from Figures 4D through 4H of Harolds.com store and Figures 5A through 5K of the Spiegel.com store.~~

[0022] Spiegel.com shown in Figure 5A, a well acknowledged on-line department store listed in AOL Shopping’s “Department Stores” category, uses only two category-levels for its on-line shopping functions. The left column shown in Figure 5A[[B]] of the web pages is used as a partition to list its first level categories and the 2nd level categories of a selected first category. The second level category under a specific category appears, when that specific category is “clicked.” As shown in Figure 5B[[C]]. If another 1st level category is subsequently clicked, the first set of second level categories disappears, and the new set appears under the subsequently clicked category (~~see Figures 5C, 5D~~). The number of each set of the 2nd level categories is large ~~as shown in Figures 5C, 5D, 5H, 5I~~, but not as large as that of some of the ebaY.com’s categories. There is no third level category under the 2nd level categories. For example, When the “Accessories” (or “Fine Jewelry”) category is clicked, the web-page containing all merchandise categorized under “Accessories” or (“Fine Jewelry”) ~~shown in Figures 5E, 5F~~ is downloaded. Clicking on a thumbnail downloads the larger picture and detailed

description of the item. This scheme functions reasonably well when the number of items under each 2nd level category is not large, ~~as shown in Figure 5~~. Ideally, in a fully functioning on-line department store, there should be hundreds or thousands of items in the “Accessories” category, making sub-categorization under “Accessories” a necessity. In such situation, the Spiegel scheme is not usable. As the site is further reviewed, it is found that there are invariably very few items under each second level category ~~shown in Figures 5E, 5F, 5H, 5I, 5K~~.

SUMMARY OF THE INVENTION

[0023] The present invention is related to an intelligent, convenient and time-saving method and apparatus to browse electronic media by clicking only once from a nested cascading category structure, without repeated, unwanted and unneeded intermediary downloads for category listing pages, as required in the prior art. The present invention also relates to easy pre-browsing of the category structure, rolling from category to category to view each category’s sub-categories, and back and forth from level to level without having to click any one category and download its next-level category listing pages. With the present invention, the viewer/browser clicks only once to download precisely the content page of interest after at any point during the examination of the category structure and category titles, at any hierarchical level of the category structure.

[0024] The present invention also relates to a dynamic tracking device, which can be represented by a text-string or a string of graphical symbols, with an embedded nested/cascading/roll-over category browsing apparatus of this invention, to facilitate an efficient way to return, move, forward, and/or change path during browsing and examination of electronic media, or to easily review more than one path along the categorical structure. The invented method and apparatus advances the state of the art, and significantly improves the method and processes of exploring, viewing, and examining electronically recorded media.

[0025] The prior art on the other hand requires the browser to click and download a new web page to view a sub-category listing under a particular category along the current browsing path at a certain hierarchical level. To examine the sub-categories under another category of the

same level, or at a different level, to consider browsing a different path, the browser must select, click, and download back and forth numerous times to see each level of subcategory listing under each category. Examining many categories at the same level or at different levels using the prior art would require innumerable clicking forward, backward, and download waiting cycles, costing time, labor, and computing and data transmission resources.

BRIEF DESCRIPTION OF THE DRAWINGS

- [0026] Figures 1A through ~~4D~~1D describe ebaY.Com category assisted browsing scheme.
- [0027] Figure[[s]] ~~2A through 2I~~ describes Yahoo.Com category assisted browsing scheme.
- [0028] Figures 3A through ~~3B~~3I describe Homeportfolio.Com category assisted browsing scheme.
- [0029] Figure[[s]] ~~4A through 4K~~ describes AOL.Com category assisted browsing scheme.
- [0030] Figures 5A through 5B ~~5K~~ describe Spiegel.Com category assisted browsing scheme.
- [0031] Figures 6A through 6E illustrate the dynamic one-click nested cascading category browsing method and apparatus of the present invention.
- [0032] Figures 7A through 7G illustrate the dynamic tracking-string/tracking-device with embedded nested-cascading category browsing apparatus of the present invention.
- [0033] Figure 8A through ~~8E~~ 8B2 illustrate another implementation of dynamic one-click nested cascading category browsing method and apparatus of the present invention. (~~Will send it to you when we have enough time. Otherwise it is not important~~)

DETAILED DESCRIPTION OF THE EMBODIMENT OF THE INVENTION

- [0034] Described is a method and apparatus for browsing the category structure of a web site independently of the media pages thereby bypassing the repeated, time-consuming page downloading for viewing sub-category titles required in the prior art. Also described is a method and apparatus to assist browsers to easily explore different categories and browsing paths along category trees, without the time consuming, repeated page downloading and “clicking back and

forth among web pages of different categories, and between different levels of categories on the category tree as required in the prior art.

[0035] The invention enables content provider to organize the electronic media under meaningful and sensibly sized partitions and levels, nested and cascading category titles. The invention further maintains the categorization titles and structure in textual format, and as a complete entity of its own, with or without parsing portions of the category structure to embed into various content pages. In the present invention, categorization structure is organized according to user friendliness, without need to include a very large number of categories in one level, in order to reduce the number of levels in the category structure, to reduce the number of click-and-wait cycle, as required in the prior art. The categorization titles and structure of the current invention is organized, stored, and presented economically and efficiently. The titles and their structural relations can be delivered to any or all content pages, but separate from the rest of the media content present on the pages.

[0036] The category structure of the present invention, although resides with the web-pages, does not need to be displayed on the computer viewing screen with the rest of the page content, until specifically called for. The category structure can be browsed and examined in detail, independent of the web-page content. No web page downloading is required until the browser is satisfied with the browsing and examination of the category structure and titles, and has determined a specific category of interest. Only then, the link-token associated with this specific, selected category title need be invoked to initiate the downloading of the content that is specifically related to this particularly selected category. When the cursor is moved away from the category structure, the structure disappears, again hidden from view without disrupting the display and viewing of the rest of the media content on the page.

[0037] Figure 6 shows an example implementation of the present invention, the “One Click” category browsing. Figure 6A shows an example home-page, with a text-string or a symbol representing the gateway (2) to viewing the category structure, in our example, -- “Category Listings” at the upper left of the page content is used as such symbol. When the cursor is moved, or “rolled-over” to that “Category Listing” (2), without having to click the mouse button, the primary category titles (100) appear under “Category Listing”, as shown in

Figure 6B. If the browser moves (or rolls-down) the cursor to any one of these primary category titles (102), for example, to “BonneVie@Home” (102) as the selected category, the category titles under “BonneVie@Home” appear to the right of the primary category titles (200), without clicking action or any downloading from the site-server, and “BonneVie@Home” (102) is highlighted as shown in Figure 6C. When the cursor is “rolled-over” to one of these 2nd level categories (200), for example, “Outdoor Living,” (202) the “Outdoor Living” becomes highlighted, and another list appears to the right of the 2nd level category list to show the 3rd level category titles (300) under the “Outdoor Living” category as shown in Figure 6D, again without clicking or downloading from the site-server. Figure 6E shows another level of “rolling-over” the cursor to the “Furnishing” (302) sub-category organized under the “Outdoor Living” category (202). The “Furnishing” category (302) title becomes highlighted, and the next level category titles appears (400). Thus progressing, until the desired level, or the last level of categorization is reached. Furthermore, if the browser wishes to examine different browsing paths before committing to “clicking” for the content, all is needed is to move the cursor to other categories either at the same level or any other level. As the cursor is moved to a different category at the same or different levels, the list of the subcategories of the previous category disappears, the category title itself is “un-highlighted,” and the next category where the cursor is presently rested becomes highlighted, and its next-level categories appears. The “rolling” over or forward of the cursor causes the ‘next-level category titles to appear, and the “rolling” backward causes the current level and next levels of category titles to appear. Moving the cursor away from the category structure, the entire structure disappears except for the text-string or the symbol “Category Listing” -representing the gateway key (2) to viewing and browsing the category structure.

[0038] Without the interference of having to “click and download” at each category and each level to see the next level categories, using the present invention, the organization of the media content can be optimized for user friendliness, rather than for accommodating a tolerable number of “click-and-wait” cycles as in the prior art. There is no longer reason to include a very large number of items under a category title; or to include a very large number of category titles within a category level, in order to minimize the number of category levels.

[0039] At any level or any branching point, the browser can elect to click on the mouse button on a category title to download the entire content pages associated with that category. For example, if the “Furnishing” (302) title is clicked, all outdoor furnishing would be listed and/or described on the page downloaded from the server. If the Vinyl Furniture (402) is selected and “clicked,” only Vinyl outdoor furniture will be contained in the page downloaded from the server. If the cursor is moved from “Furnishing” to “Grills,” (302) the “Furnishing” sub-category box would disappear, and the sub-categories for “Grills” would appear in the new box in its place. The category title “Grills” becomes highlighted, and “Furnishing” un-highlighted. If the cursor is moved back to “Home Office” (202) of the 2nd level category box, the last two levels of lists shown in Figure 6E would disappear, and a new list would appear to list the sub-category titles under the “Home Office” category, with the “Home Office” highlighted. When the interested/ desired category is reached at any level, a mouse click with the cursor resting on that particular category will download from the site-server the web content linked to the link-token of that particular category.

[0040] With the present invention the browsing and examination of the categorization structure is facilitated in the most logical and convenient fashion, allowing the browser to roll-over up or down within the same level, or back and forth, between the nesting/ cascading levels, until the browser is certain of which category title best fits the information he or she is searching, without having to download intermediary web-pages, level-by-level, and category-by-category, just to view the titles of the next level categories, as is necessary with the prior art. With the present invention, the structuring and the categorization of electronic media can now be optimized for the ease of locating information.

[0041] ~~As illustrated in Figure 1 through Figure 5,~~ The prior art seeks to minimize the number of levels of categorization, and/or maximize the number of categories listed on one single web page. This is done in order to minimize the number of categorical levels and the associated annoyance of many downloading steps and the waiting periods, as dictated by the prior art. The prior art parses the categorization structure, and embed lower level category titles with the follow-on media content page of the prior level category, displaying both the category titles and the associated or unassociated page content. In so doing, a lower level category can

only be reached by clicking the link-token of its parent category, and downloading the follow-on page containing the titles of the sub-categories along with other content of the page. Often, the category titles take up the majority space of the viewable area of the page.

[0042] Figures 7A through 7G illustrate an exemplary embodiment of the “dynamic” tracking-string/tracking-device” (702) feature of the present invention. Near the top of the page shown in Figure 7A, is a string of textual titles or a string of symbols indicating the categorical hierarchy of the current web-page (702), starting with either the home-page, or the first level category, and ending at the current page category title. Several advanced web sites contain a static tracking string as described in Figures 1C and 1D. ~~this facility as shown in Figure 1 through Figure 4.~~ The present invention differs from, and advances the state-of-the-art, in that the tracking-string/tracking-device (702) is embedded with a hidden dynamic category browsing apparatus of this invention, as described in detail in Figure 6, while the prior art tracking scheme is either inactive, or linked only specifically to the pages linked to each category title along the hierarchical category title chain represented by the text-string.

[0043] In Figure 7A, the “Art & Antiques” is the primary (1st) level category (110) of the current browsing path, and the page shown is at the Art’s branch (210) of that category. The tracking-string/tracking-device above the graphics states: “Art & Antiques | Arts” (702). When the cursor is moved to directly on top of the “Arts” (210) in the tracking-string/tracking-device, the two same-level categories (200) “pop-up” in under “Arts” as shown in Figure 7B. A Browser can pursue the “Antiques” path (202) and forward, without “clicking” back to the “Art & Antiques” level (110). When the cursor is placed on top of the “Art & Antiques” (110) in the tracking-string/tracking-device (702), the same-level categories (100), in this case, the primary level categories “pop-up” underneath the string (702) as shown in Figure 7C. The browser can explore other primary category paths (100) while staying on this very page as shown in Figure 6. For example, if the cursor is moved to the “Art & Antiques” category title (102), the title becomes highlighted, and its next category titles (200) pop-up next to the primary category, as shown in Figure 7D. If the cursor is rolled down to BonneVie@Home, (102) the “Arts, Antiques”’s next-level category titles disappear, and the next-level category titles (200) for BonneVie@Home pop-up next to BonnVie@Home and BonneVie@Home is highlighted. The

apparatus to explore the category structure resides on this very page (and every page, if so desired), with no clicking of the mouse button and no page-downloading required, until the browser identifies the exact level and the exact category of interest. Figures 7D, 7E, 7F, and 7G show the “rolling” of the cursor from the primary level category BonneVie@Home (102) to one of its 2nd level category (200) title “Outdoor Living,” (202) to one of the 3rd level (300) category title, “Furnishing” (302). At any stage during the exploration of category structure and titles, any category at any level can be selected and “clicked” to download the content pages linked to the category title (102, 202, etc). At any stage during the exploration of category structure and titles, rolling the cursor backward causes the higher (latter) level category title lists to disappear from view. Moving the cursor away from the tracking device area (702), all category listing (100, 200, 300, 400) disappear.

[0044] The dynamic tracking-string/tracking-device (702) with embedded category browsing/ exploration apparatus allows browsers to return to, or forward to any category level (100, 200, 300, 400) to seek a different browsing path from any page, using one single mouse-click and one page download to reach the new destination information of interest.

[0045] Figure 8A shows a variation of the embodiment of the “one click” browsing feature of the present invention where the next-level category listing (100, 200, 300, 400) is shown along side the previous level at an even level at the top. The notation for which category’s next-level is shownu, is indicated in a change of the background color for that category title.

[0046] One can also implement that a single click on a category title prompts the display of its next-level category listing. A single click on another category title “turns off” the old list, and prompts the display of the next-level category listing for this newly “clicked” category. In such implementation, a “double-click” is used to call for the downloading of the URL page linked by the particular link-token to the “double-clicked” category title.

[0047] Figure 8B 8B1 and 8B2 illustrate[[s]] one embodiment of the tracking device of the present invention. The text-string (the tracking-string) (702) at the top of the page indicates the particular sequence of category browsing path of the current page displayed on the screen.

Normally, there is no drop-down menu shown on the screen to interfere with the display of the current page. When the browser brings the cursor to any ~~of the~~ category title (110, 210, 310, 410, 510, or 610) along the browsing path indicated by the tracking-string (702), a drop-down menu (100, 200, 300, 400, 500, or 600) would appear to show the parallel category titles to that category. It can also be implemented that the drop-down menu (100, 200, 300, 400, 500, or 600) appears only with the prompting of a single click (prompting-click) on that category title (110, 210, 310, 410, 510, or 610) on the tracking string (702), and stays on until after another prompting-click on the same category title (110, 210, 310, 410, 510, or 610) is performed. At which time, the drop-down menu (100, 200, 300, 400, 500, or 600) disappears. Note that the prompting-clicks are only used to turn the drop-down menu (100, 200, 300, 400, 500, or 600) “on” and “off”, but not to download anything from the remote storage device. To call for the download of an URL page from within the browsing and tracking device (702) of the present invention in this implementation, a “double-clicking” is used.

[0048] When the cursor is moved to any other category title (110, 210, 310, 410, 510, or 610) along the tracking-string (702), in the “no click” implementation, the first drop-down menu (100, 200, 300, 400, 500, or 600) under the category title (110, 210, 310, 410, 510, or 610) where the cursor was placed previously would disappear, and the new drop-down menu (100, 200, 300, 400, 500, or 600) showing parallel category titles to the category (110, 210, 310, 410, 510, or 610) the cursor is presently pointing. When the cursor is rolled down along the drop-down menu (100, 200, 300, 400, 500, or 600) to a different category title (102, 202, etc), and resting on one particular category title (102, 202, etc) its next-level category title (200, 300, 400, 500, or 600) listing appears to the left of the particular category title (102, 202, etc) the cursor is resting to pointing on, as described in “One Click Category Browsing” device in Figure 8B₁.

[0049] When the cursor is moved to any other category title (110, 210, 310, 410, 510, or 610) along the tracking-string (702), in the “prompting-click” implementation, the first drop-down menu (100, 200, 300, 400, 500, or 600) under the category title (110, 210, 310, 410, 510, or 610) where the cursor was placed previously would stay on, and the new drop-down menu (100, 200, 300, 400, 500, or 600) showing parallel category titles to the new category (110, 210, 310, 410, 510, or 610) the cursor is presently pointing to would appear if the browser “clicks” on

this present category. One can move from one category title (110, 210, 310, 410, 510, or 610) to another along the tracking-string (702), in no particular sequence, to “click” once to see the parallel category titles listed (100, 200, 300, 400, 500, or 600), and another “click” to turn off the list-make it disappear from the screen. When the cursor is rolled down along the drop-down menu (100, 200, 300, 400, 500, or 600) to a different category title (102, 202, etc), and rests on one particular category title (102, 202, etc), its next-level category title list (200, 300, 400, 500, or 600) appears to the left of the particular category title (102, 202, etc) the cursor is presently resting on, as illustrated in “One Click Category Browsing” device in Figure 8B1. The drop-down menu (200, 300, 400, 500, or 600) for the next-level tracking-string (702) category currently indicated can be programmed to disappear to avoid confusion, or can stay on in the background, if the new “pop-up” menu (200, 300, 400, 500, or 600) for the other now indicated category (102, 202, etc) overlaps a part of the tracking-string drop-down menu (100, 200, 300, 400, 500, or 600). The branching into a different category browsing path from the current page, can be indicated with a different background color, if so desired.

[0050] The present invention is implemented using software which can be written in many programming languages, or implemented with many web-page generation tools. The present invention can be used on a global or local computer network, on a personal computer, on viewable storage media such as a CD or DVD ROM, on a wireless telephone, on a wireless personal assistant such as a Palm Pilot®, or on any type of wired or wireless device that enables digitally stored information to be viewed. Also, information displayed and viewed using the present invention can be printed, stored to other storage medium, and electronically mailed to third parties.

[0051] Numerous modifications to and alternative embodiments of the present invention will be apparent to those skilled to the art in view of the foregoing description. Accordingly, this description is to be construed as illustrative only and is for the purpose of teaching those skilled in the art the best mode of carrying out the invention. Details of the structure may be varied substantially without departing from the spirit of the invention and the exclusive use of all modifications which come within the scope of the appended claims is reserved.

ABSTRACT OF THE DISCLOSURE

A method and apparatus to browse electronic media stored over a network of remote storage devices, or any other local or remote storage devices, including CD/DVD ROM, desktop computers, servers, and disk drives by categories, without repeated, unwanted and unneeded intermediary clicking and page downloads. Pre-browsing of the category structure is provided, via rolling the cursor from category to category, and level to level to view each category's next-level sub-categories, without having to click on any one category, nor download any web-pages linked to any category, until the viewer/browser is satisfied with the examination of the category structure and category titles, and ready to select and explore the media page[[t]] linked to a particular category.

In addition, a dynamic tracking-string/tracking-device is provided with an embedded one-click nested/cascading/ category browsing apparatus of this invention, to facilitate an efficient way to return and/or change path during browsing and examination of electronic media,~~or to review more than one path along the categorical structure while the browser is at a page linked to any category at any level, thereby improving the process of exploring, viewing, and examining electronically recorded media.~~